We claim:

1.   A method for designing an object comprising the steps of:

a) providing a computer having a display;

b) providing a physical surrogate of said object;

c) providing in said computer a data base of said object;

d) using said data base, displaying a 3D representation of said object;

e) determining the position of a member positioned by a person designing said object;

f) determining a position of said surrogate; and

g) from said determined position, determining changes to said object data base to be made in said computer.

2.   A method according to claim 1, wherein said surrogate is a model of an object.

3.   A method according to claim 1, wherein said determining the position of said member is made electro-optically.

4.   A method according to claim 1, wherein said electro-optical determination is made using at least one TV camera.

5.   A method according to claim 4, wherein a stereo pair of TV cameras are employed.

6.   A method according to claim 1, wherein datums on said member are sensed.

7.   A method according to claim 1, wherein datums on said surrogate are sensed.

8.   A method according to claim 1, wherein datums are sensed in relation to the position of said surrogate.

9. A method according to claim 1, wherein said member is positioned based on determination of information on said 3D display.

10. A method according to claim 1, wherein changes in the data base are reflected in changes to said 3D display.

11. A method according to claim 1, wherein said steps f and g are repeated to effect a continued change in said data base and the display thereof.

12. A method according to claim 1, wherein said steps e to g are repeated to effect a continued change in said data base and the display thereof.

13. A method according to claim 1, including the further step of creating a new surrogate using said changed data base.

14. A method according to claim 1, including the further step of sensing orientation as well as position of at least one of said surrogate or said member.

15. A method according to claim 1, wherein the relative position of said member with respect to said surrogate is sensed.

16. A method according to claim 1, wherein said changes to said data base effect a change in a surface shape of said 3D representation of said object.

17. A method according to claim 1, wherein said surrogate is stationary.

18. A method according to claim 1, wherein said surrogate is moved in executing said design.

19. A method according to claim 1, wherein said surrogate is rotated in executing said design.

20. A method according to claim 1, wherein said surrogate is held in a hand of said person.

21. A method according to claim 1, wherein said member is said person's finger.

22. A method according to claim 1, wherein said member is said person's hand.

23. A method according to claim 1, wherein said member is held in a hand of said person.

24. A method according to claim 1, wherein said member has a known shape which is used to change said data base when moved by said person.

25. A method according to claim 1, wherein information concerning said member is electro-optically communicated to said computer.

26. A method according to claim 1, wherein said data base is downloaded from a file.

27. A method according to claim 1, wherein said data base is generated electro-optically from a physical object.

28. A method according to claim 1, where said surrogate is an arbitrary object.

29. A method according to Claim 2 wherein said surrogate is a vehicle model

30. A method for designing an object comprising the steps of:
- providing a computer having a display;
- providing a physical surrogate of said object;
- providing in said computer a data base of said object;
- using said data base, displaying a 3D representation of said object;

- determining the orientation of a member positioned by a person designing said object;

- determining the orientation of said surrogate; and

- from said determined orientation, determining changes to said object data base to be made in said computer.

31. A method according to claim 30, including the further step of determining the position of said surrogate and/or said member.

32. A method according to claim 30, wherein said orientation of said surrogate is determined electro-optically.

33. A method according to claim 31, wherein said position is determined electro-optically.

34. A method according to claim 30, wherein said electro-optical determination employs at least one TV camera.

35. A method for designing an object comprising the steps of:
- providing a computer having a display;
- providing a physical surrogate of said object;
- providing in said computer a data base of said object;
- using said data base, displaying a 3D representation of said object;
- determining the relative position of a member positioned by a person designing said object with respect to said surrogate; and
- from said determined relative position, determining changes to said object data base to be made in said computer.

36.   A method according to claim 35, including the further step of determining the relative orientation of said surrogate and/or said member.

37.   A method according to claim 35, wherein said relative position is determined electro-optically.

38.   A method according to claim 36, wherein said relative orientation is determined electro-optically.

39.   A method according to claim 35, wherein said member is said person's finger.

40.   A method according to claim 35, wherein said member is said person's hand.

41.   A method according to claim 35, wherein said member is held in a hand of said person.